WHAT IS CLAIMED IS

1. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil, wherein said ultra-thin copper foil and said peeling layer are provided between them with a strike plating layer and wherein said ultra-thin copper foil and said strike plating layer are one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer.

2. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil, wherein said ultra-thin copper foil and said peeling layer are provided between them with a strike plating layer comprised of one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer, said strike plating layer is provided on it with a copper plating ultra-thin layer, and said ultra-thin layer is provided on it with said ultra-thin copper foil comprised of one of copper and a copper alloy.

3. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil, wherein said ultra-thin copper foil and said peeling layer are provided between them with a strike plating layer comprised of one of a

phosphorus-containing copper layer and a phosphorus-containing copper alloy layer, said strike plating layer is provided on it with a copper plating ultra-thin layer, and said ultra-thin layer is provided on it with said ultra-thin copper foil comprised of one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer.

4. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil, wherein said ultra-thin copper foil and said peeling layer are provided between them with a strike plating layer comprised of one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer, said strike plating layer is provided on it with an ultra-thin layer comprised of one of a phosphorus-containing copper layer and phosphorus-containing copper alloy layer, and the ultra-thin layer is provided on it with said ultra-thin copper foil comprised of one of copper and a copper alloy.

5. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil, wherein said ultra-thin copper foil and said peeling layer are provided between them with a strike plating layer comprised of one of a phosphorus-containing copper layer and a phosphorus-

containing copper alloy layer, said strike plating layer is provided on it with an ultra-thin layer comprised of one of a phosphorus-containing copper layer and phosphorus-containing copper alloy layer, and the ultra-thin layer is provided on it with said ultra-thin copper foil comprised of one of a phosphorus-containing copper and a phosphorus-containing copper alloy.

6. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil, wherein a surface roughness Rz of a surface of the carrier foil on the ultra-thin copper foil side is 0.1 μm to 5 μm, a surface roughness Rz of a carrier foil side of the ultra-thin copper foil provided on the peeling layer provided on said carrier foil surface is 0.1 μm to 5 μm, one of a copper and copper alloy layer covering at least 90% of the area of the surface of the peeling layer is formed at a position of the surface roughness Rz of the ultra-thin copper foil plus 0.1 μm to 0.2 μm at the ultra-thin copper foil side from the projections of the surface relief on the carrier foil side of the ultra-thin copper foil, and a peel strength after hot bonding of at least 300°C is 0.01 KN/m to 0.05 KN/m.

7. An ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an

ultra-thin copper foil, wherein a surface roughness Rz of a surface of the carrier foil on the ultra-thin copper foil side is 0.1 μm to 5 μm, a surface roughness Rz of a carrier foil side of the ultra-thin copper foil provided on the peeling layer provided on said carrier foil surface is 0.1 μm to 5 μm, one of a copper and copper alloy layer having a conductivity of at least 90% is formed at a position of the surface roughness Rz of the ultra-thin copper foil plus 0.1 μm to 0.2 μm at the ultra-thin copper foil side from the projections of the surface relief on the carrier foil side of the ultra-thin copper foil, and a peel strength after hot bonding of at least 300°C is 0.01 KN/m to 0.05 KN/m.

8. An ultra-thin copper foil with a carrier as set forth in any one of claims 1 to 5, wherein the surface roughness Rz of the carrier foil surface at the ultra-thin copper foil side is 0.1 μm to 5 μm and the peel strength after hot bonding of at least 300°C is 0.01 KN/m to 0.05 KN/m.

9. An ultra-thin copper foil with a carrier as set forth in any one of claims 1 to 5, wherein a surface roughness Rz of a surface of the carrier foil on the ultra-thin copper foil side is 0.1 μm to 5 μm, a surface roughness Rz of a carrier foil side of the ultra-thin copper foil provided on the peeling layer provided on

said carrier foil surface is 0.1 μm to 5 μm, one of a copper and copper alloy layer covering at least 90% of the area of the peeling layer surface is formed at a position of the surface roughness Rz of the ultra-thin copper foil plus 0.1 μm to 0.2 μm at the ultra-thin copper foil side from the projections of the surface relief on the carrier foil side of the ultra-thin copper foil, and a peel strength after hot bonding of at least 300°C is 0.01 KN/m to 0.05 KN/m.

10. An ultra-thin copper foil with a carrier as set forth in any one of claims 1 to 5, wherein a surface roughness Rz of a surface of the carrier foil on the ultra-thin copper foil side is 0.1 μm to 5 μm, a surface roughness Rz of a carrier foil side of the ultra-thin copper foil provided on the peeling layer provided on said carrier foil surface is 0.1 μm to 5 μm, one of a copper and copper alloy layer having a conductivity of at least 90% is formed at a position of the surface roughness Rz of the ultra-thin copper foil plus 0.1 μm to 0.2 μm at the ultra-thin copper foil side from the projections of the surface relief on the carrier foil side of the ultra-thin copper foil, and a peel strength after hot bonding of at least 300°C is 0.01 KN/m to 0.05 KN/m.

11. An ultra-thin copper foil with a carrier as set

forth in any one of claims 1 to 7, wherein said peeling layer is one of a chromium metal and chromium alloy.

12. An ultra-thin copper foil with a carrier as set forth in any one of claims 1 to 7, wherein said peeling layer is one of an oxide hydrate of a chromium metal and chromium alloy.

13. An ultra-thin copper foil with a carrier as set forth in any one of claims 1 to 7, wherein said peeling layer is formed by one of a chromium metal, chromium alloy, and oxide hydrate of one of a chromium metal and chromium alloy.

14. An ultra-thin copper foil with a carrier as set forth in claim 11, wherein the amount of deposited metal of one of a chromium metal and chromium alloy of the peeling layer is not more than 4.5 mg/dm^2.

15. An ultra-thin copper foil with a carrier as set forth in claim 12, wherein the amount of deposited metal of one of a chromium metal and chromium alloy in the peeling layer comprised of an oxide hydrate is not more than 0.015 mg/dm^2.

16. An ultra-thin copper foil with a carrier as set forth in claim 13, wherein the amount of deposited metal of one of a chromium metal and chromium alloy of the peeling layer is not more than 4.5 mg/dm^2.

17. An ultra-thin copper foil with a carrier as set

forth in any one of claims 1 and 5 to 7, wherein said peeling layer is one of nickel, iron, an alloy of the same, and an oxide hydrate containing the same.

18. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including plating the surface of the carrier foil with one of chromium, nickel, iron, and an alloy of the same to form a peeling layer, forming on the peeling layer one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer by strike plating in one of a phosphorus-containing copper and a phosphorus-containing copper alloy plating bath, and forming on it by plating an ultra-thin copper foil comprised of one of a phosphorus-containing copper and a phosphorus-containing copper alloy.

19. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including plating the surface of the carrier foil with one of chromium, nickel, iron, and an alloy of the same to form a peeling layer, strike plating the peeling layer with one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer in one of a phosphorus-containing copper and a phosphorus-containing

copper alloy plating bath, forming on the strike plating layer an ultra-thin layer by one of a copper and a copper alloy plating, and forming on the ultra-thin layer an ultra-thin copper foil by one of a copper and a copper alloy plating.

20. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including plating the surface of the carrier foil with one of chromium, nickel, iron, and an alloy of the same to form a peeling layer, strike plating the peeling layer with one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer by strike plating in one of a phosphorus-containing copper and a phosphorus-containing copper alloy plating bath, forming on the strike plating layer an ultra-thin layer by one of a copper and a copper alloy plating, and forming on the ultra-thin layer an ultra-thin copper foil by one of a phosphorus-containing copper and a phosphorus-containing copper alloy plating.

21. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including plating the surface of the carrier foil with one of chromium, nickel, iron, and an alloy of the same to form

a peeling layer, strike plating the peeling layer with one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer by strike plating in one of a phosphorus-containing copper and a phosphorus-containing copper alloy plating bath, forming on the strike plating layer an ultra-thin layer comprised of one of a phosphorus-containing copper and a phosphorus-containing copper alloy, and forming on the ultra-thin layer an ultra-thin copper foil by one of a copper and a copper alloy plating.

22. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including plating the surface of the carrier foil with one of chromium, nickel, iron, and an alloy of the same to form a peeling layer, strike plating the peeling layer with one of a phosphorus-containing copper layer and a phosphorus-containing copper alloy layer by strike plating in one of a phosphorus-containing copper and a phosphorus-containing copper alloy plating bath, forming on the strike plating layer an ultra-thin layer comprised of one of a phosphorus-containing copper and a phosphorus-containing copper alloy, and forming on the ultra-thin layer an ultra-thin copper foil by one of a phosphorus-containing copper and a phosphorus-containing

copper alloy plating.

23. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including forming on the surface of the carrier foil having a surface roughness Rz of 0.1 μm to 5 μm a peeling layer, forming on the peeling layer an ultra-thin copper foil to give a surface roughness Rz of a carrier foil side of 0.1 μm to 5 μm, forming a strike plating layer by one of a pH3 to pH13 phosphorus-containing/not containing copper and phosphorus-containing/not containing copper alloy plating bath so that at least 90% of the area of the peeling layer surface is covered by a copper layer at a position of the surface roughness Rz of the ultra-thin copper foil plus 0.1 μm to 0.2 μm at the ultra-thin copper foil side from the projections of the surface relief on the carrier foil side of the ultra-thin copper foil, and forming on the strike plating layer one of a phosphorus-containing/not containing copper and copper alloy layer as the ultra-thin copper foil of a predetermined thickness.

24. A method of production of an ultra-thin copper foil with a carrier comprised of a carrier foil, a peeling layer, and an ultra-thin copper foil including forming on the surface of the carrier foil having a

surface roughness Rz of 0.1 μm to 5 μm a peeling layer, forming on the peeling layer an ultra-thin copper foil to give a surface roughness Rz of a carrier foil side of 0.1 μm to 5 μm, forming a strike plating layer by one of a pH3 to pH13 phosphorus-containing/not containing copper and phosphorus-containing/not containing copper alloy plating bath so as to give a copper layer having a conductivity of at least 90% at a position of the surface roughness Rz of the ultra-thin copper foil plus 0.1 μm to 0.2 μm at the ultra-thin copper foil side from the projections of the surface relief on the carrier foil side of the ultra-thin copper foil, and forming on the strike plating layer one of a phosphorus-containing/not containing copper and copper alloy layer as the ultra-thin copper foil of a predetermined thickness.

25. A printed circuit board wherein an ultra-thin copper foil with a carrier as set forth in any one of claims 1 to 7 is used to form high density ultrafine interconnects.

26. A printed circuit board wherein an ultra-thin copper foil with a carrier produced by a method of production of an ultra-thin copper foil with a carrier as set forth in any one of claims 18 to 24 is used to form high density ultrafine interconnects.

27. A printed circuit board wherein an ultra-thin

copper foil with a carrier as set forth in claim 8 is used to form high density ultrafine interconnects.

28. A printed circuit board wherein an ultra-thin copper foil with a carrier as set forth in claim 9 is used to form high density ultrafine interconnects.

29. A printed circuit board wherein an ultra-thin copper foil with a carrier as set forth in claim 10 is used to form high density ultrafine interconnects.